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Europäisches
Patentamt

Zweigstelle
in Den Haag
Recherchen-
abteilung

European
Patent Office

Branch at
The Hague
Search
division

Office européen
des brevets

Département à
La Haye
Division de la
recherche

1/2

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Datum/Date

17.12.2001

Zeichen/Ref./Réf.

10538/CH/ajk

Anmeldung Nr./Application No./Demande n°/Patent Nr./Patent No./Brevet n°

99125813.8

Anmelder/Applicant/Demandeur/Patentinhaber/Proprietor/Titulaire

KONICA CORPORATION

COMMUNICATION

The European Patent Office herewith transmits

- ☒ the European search report
- ☐ the declaration under Rule 45 EPC
- ☐ the partial European search report under Rule 45 EPC
- ☐ the supplementary European search report concerning the international application under Article 157(2) EPC relating to the above-mentioned European patent application. Copies of the documents cited in the search report are enclosed.

The following specifications given by the applicant have been approved by the Search Division :

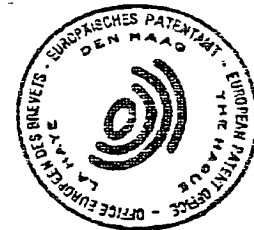
- ☒ Abstract
- ☒ Title
- ☐ Figure
- ☐ The abstract was modified by the Search Division and the definitive text is attached to this communication.
- ☐ The following figure will be published with the abstract, since the Search Division considers that it better characterises the invention than the one indicated by the applicant.

Figure:

- ☒ Additional copy(copies) of the documents cited in the European search report.

REFUND OF THE SEARCH FEE

If applicable under Article 10 Rules relating to fees, a separate communication from the Receiving Section on the refund of the search fee will be sent later.



EPO Form 1507 02.93



DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	CHIHAYA ADACHI ET AL: "ELECTROLUMINESCENT MECHANISM OF ORGANIC MULTILAYER THIN FILM DEVICES", OPTOELECTRONICS DEVICES AND TECHNOLOGIES, MITA PRESS, TOKYO, JP, VOL. 6, NR. 1, PAGE(S) 25-36 XP000245826 ISSN: 0912-5434 * page 27 * ---	1	C09K11/06 H05B33/14 G02B5/20 C07F5/06
X	US 5 656 401 A (TAKAHASHI TOSHIHIKO ET AL) 12 August 1997 (1997-08-12) * claim 1; examples II-27 * ---	1	
X	US 5 597 925 A (TAKAHASHI TOSHIHIKO ET AL) 28 January 1997 (1997-01-28) * claim 1; examples II-27 * ---	1	
X	US 5 128 587 A (KIDO JUNJI ET AL) 7 July 1992 (1992-07-07) * column 4, line 32 - column 5, line 24; claims 1,5,9; examples 1-9 * ---	20,21, 25-27	
X	DE 197 26 472 A (PHILIPS PATENTVERWALTUNG) 24 December 1998 (1998-12-24) * page 2 - page 4; claims 1,2 * ---	20,25	TECHNICAL FIELDS SEARCHED (Int.Cl.7) C07F C09K H05B G02B
P,X	EP 0 936 844 A (KIDO JUNJI ;INT MANUFACTURING AND ENGINEER (JP)) 18 August 1999 (1999-08-18) * claim 1; examples 5,8 * ---	20-22, 25,27	
-/--			
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 6 December 2001	Examiner Wengeler, H
<div>CATEGORY OF CITED DOCUMENTS</div> <div>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</div> <div>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</div>			

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EPO FORM 1503 03 82 (P04C01)



DOCUMENTS CONSIDERED TO BE RELEVANT															
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)												
X	KIDO J ET AL: "White-light-emitting organic electroluminescent device using lanthanide complexes" JAPANESE JOURNAL OF APPLIED PHYSICS, PUBLICATION OFFICE JAPANESE JOURNAL OF APPLIED PHYSICS. TOKYO, JP, vol. 38, no. 35, pages L394-L396, XP002079654 ISSN: 0021-4922 * page 394 - page 395 * ---	20-27	TECHNICAL FIELDS SEARCHED (Int.Cl.7)												
X	DIRR S ET AL: "Luminescence enhancement in microcavity organic multilayer structures" SYNTHETIC METALS, ELSEVIER SEQUOIA, LAUSANNE, CH, vol. 91, no. 1/3, 21 May 1997 (1997-05-21), pages 53-56, XP002079653 ISSN: 0379-6779 * page 53 - page 55 * ---	20,21, 25,27													
X	LIU LIN ET AL: "Europium complexes as emitters in organic electroluminescent devices" SYNTHETIC METALS, ELSEVIER SEQUOIA, LAUSANNE, CH, vol. 91, no. 1/3, 21 May 1997 (1997-05-21), pages 267-269, XP002079652 ISSN: 0379-6779 * page 267 - page 269 * -----	20,25,27													
The present search report has been drawn up for all claims															
Place of search THE HAGUE		Date of completion of the search 6 December 2001	Examiner Wengeler, H												
<table border="0"><tr><td>CATEGORY OF CITED DOCUMENTS</td><td>T : theory or principle underlying the invention</td></tr><tr><td>X : particularly relevant if taken alone</td><td>E : earlier patent document, but published on, or after the filing date</td></tr><tr><td>Y : particularly relevant if combined with another document of the same category</td><td>D : document cited in the application</td></tr><tr><td>A : technological background</td><td>L : document cited for other reasons</td></tr><tr><td>O : non-written disclosure</td><td>& : member of the same patent family, corresponding document</td></tr><tr><td>P : intermediate document</td><td></td></tr></table>				CATEGORY OF CITED DOCUMENTS	T : theory or principle underlying the invention	X : particularly relevant if taken alone	E : earlier patent document, but published on, or after the filing date	Y : particularly relevant if combined with another document of the same category	D : document cited in the application	A : technological background	L : document cited for other reasons	O : non-written disclosure	& : member of the same patent family, corresponding document	P : intermediate document	
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A : technological background	L : document cited for other reasons														
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P : intermediate document															

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EPO FORM 1503 03.82 (P04C01)



CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

- ☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claim(s):
- ☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet 8

- ☐ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
- ☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.
- ☒ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:
- 1, 20-27
- ☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:



The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. Claim : 1

CLAIM 1 : electroluminescent material represented by
formula N1

2. Claims: 2-4

CLAIMS 2-4: electroluminescent material represented by
formulas A1 to A3

3. Claim : 5

CLAIM 5 : electroluminescent material represented by
formula B1

4. Claim : 6

CLAIM 6 : electroluminescent material represented by
formula C1

5. Claim : 7

CLAIM 7 : electroluminescent material represented by
formula D1

6. Claim : 8

CLAIM 8 : electroluminescent material represented by
formula E1

7. Claim : 9

CLAIM 9 : electroluminescent material represented by
formulas F1 or F2

8. Claim : 10

CLAIM 10 : electroluminescent material represented by
formula G2

9. Claims: 11-19

CLAIMS11-19:electroluminescent element comprising



The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

an electroluminescent material and an
inorganic fluorescent substance

10. Claims: 20-27

CLAIMS20-27:electroluminescent element comprising
an electroluminescent material and a
rare earth metal complex

11. Claims: 28-29

CLAIMS28-29:electroluminescent element comprising a
substrate, an electroluminescent material
containing layer and a colour conversion layer

12. Claims: 30-35

CLAIMS30-35:a colour conversion filter comprising an
inorganic fluorescent substance

13. Claims: 36-38

CLAIMS36-38:a colour conversion method

14. Claim : 39

CLAIM 39 : a rare earth metal complex
fluorescent of formula
R2

ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.

EP 99 12 5813

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

06-12-2001

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